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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/818,207	03/27/2001	Eliot M. Case	1812 (USW 0618 PUS)	2488
22193 7590 11/08/2007 QWEST COMMUNICATIONS INTERNATIONAL INC LAW DEPT INTELLECTUAL PROPERTY GROUP 1801 CALIFORNIA STREET, SUITE 3800 DENVER, CO 80202			EXAMINER ALBERTALLI, BRIAN LOUIS	
			ART UNIT 2626	PAPER NUMBER
			MAIL DATE 11/08/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	09/818,207	CASE ET AL.	
	Examiner	Art Unit	
	Brian L. Albertalli	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9 and 10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9 and 10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 2, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al. (U.S. Patent 5,913,193), in view of Hata et al. (U.S. Patent 5,878,393).

In regard to claim 1, Huang et al. disclose a method for converting text to concatenated voice by utilizing a digital voice library and a set of playback rules, the digital voice library including a plurality of speech items and a corresponding plurality of voice recordings wherein each speech item corresponds to at least one available voice recording (Fig. 5), multiple voice recordings corresponding to a single speech item representing various inflections of that single speech item (a plurality of instances of a single speech item are stored, each having a particular variance in pitch and amplitude, i.e. "various inflections", column 7, lines 26-30) the method comprising:

receiving text data (input text, column 7, lines 56-58);

expanding the text data to form a sequence of text and pseudo words
(abbreviated words and phrases are expanded to word phrases, column 7, lines 59-63);

converting the sequence of text and pseudo words into a sequence of speech items in accordance with the digital voice library (steps 124-128, the word string is converted to a diphone string, column 8, lines 13-14, lines 24-26, and lines 51-52), wherein at least one speech item in the sequence of speech items corresponds to multiple voice recordings (each diphone is associated with a plurality of instances of that diphone in the database, see Fig. 6A-C and column 8, line 57 to column 9, line 1);

converting the sequence of speech items into a sequence of voice recordings in accordance with the set of playback rules, wherein selecting a voice recording where multiple voice recordings are available for a speech item is based on a context around the speech item in the text data (a best diphone instance is selected based on the adjacent diphones, column 8, lines 57-62; see also Fig. 7 for selection rules);

generating voice data based on the sequence of voice recordings by concatenating adjacent recordings in the sequence of voice recordings (step 132, the selected instances are concatenated, column 9, lines 49-57);

wherein the plurality of speech items includes a plurality of phrases, and wherein converting the sequence of text and pseudo words further includes parsing the sequence of text and pseudo words to determine any phrases (the illustrative example utilizes diphones as speech items, however alternative units are disclosed, including phrases, column 4, lines 53-60 and column 1, lines 20-22).

Huang et al. further disclose alternative embodiments wherein speech items are selected so that different instances match well with adjacent units (i.e. represent various ligatures, column 7, lines 49-52).

Huang et al. do not disclose establishing multiple voice recordings in the digital voice library that correspond to a single inflection of a single speech item, for a plurality of inflections of a plurality of speech items, that represent various ligatures for the single inflection of the single speech item with adjacent speech items.

Hata et al. disclose a method for converting text to concatenated voice by utilizing a digital voice library, comprising establishing multiple voice recordings in the digital voice library that correspond to a single inflection of a single speech item, for a plurality of inflections of a plurality of speech items, that represent various ligatures for the single inflection of the single speech item with adjacent speech items (different intonations for a particular speech unit are stored, column 4, lines 28-36; then pronunciation variants are stored based on unit's adjacent neighbors, i.e. "various ligatures", column 4, lines 37-55).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Huang et al. to further include multiple voice recordings for each single inflection of each single speech item that represented various ligatures for the single inflection of the single speech item with adjacent speech items, because this would refine the output speech quality by ensuring that regardless of what word proceeds or follows a given word and what the prosodic environment may be, the voice

library would contain a sample to match, as taught by Hata et al. (column 4, lines 37-40 and lines 53-55).

In regard to claim 2, Huang et al. disclose searching the text data for an abbreviation (abbreviated words are found, column 7, lines 56-60); and

expanding any abbreviation contained in the text data into at least one pseudo word (words corresponding to the abbreviation, column 7, line 60 to column 8, line 12).

In regard to claim 10, Huang et al. disclose the plurality of speech items includes a plurality of syllables, and wherein converting the sequence of text and pseudo words further comprising: parsing the sequence of text and pseudo words to determine any syllables (the illustrative example utilizes diphones as speech items, however alternative units are disclosed, including phrases, column 4, lines 53-60 and column 1, lines 20-22).

4. Claims 3-5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al., in view of Hata et al., and further in view of Trader et al. (U.S. Patent 5,832,432).

In regard to claim 3, Huang et al. disclose abbreviations, acronyms, character strings, and numerical strings are expanded into pseudo words (column 7, line 59 to column 8, line 12).

However, Huang et al. and Hata et al. do not specifically disclose expanding any numerical suffix contained in the text data into at least one pseudo word.

Trader et al. disclose expanding the text data further comprises:

searching the text data for a numerical suffix (Fig. 3e, step 148, engine phrases are located, the engine phrase including the numerical suffix "L", see step 80m); and

expanding any numerical suffix contained in the text data into at least one pseudo word (the numerical suffix "L" is expanded to "litre engine", column 5, lines 26-30).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Huang et al. and Hata et al. to search for and expand any numerical suffixes contained in the text data to at least one pseudo word, because expanding the abbreviated text makes the output speech more natural sounding, as taught by Trader et al. (column 1, line 63 to column 2, line 4).

In regard to claim 4, Huang et al. disclose abbreviations, acronyms, character strings, and numerical strings are expanded into pseudo words (column 7, line 59 to column 8, line 12).

However, Huang et al. and Hata et al. do not specifically disclose expanding any telephone number contained in the text data into at least one pseudo word.

Trader et al. disclose expanding the text data further comprises:

searching the text data for a telephone number (Fig. 3b, step 108, phone number patterns are found in the ad, column 4, lines 62-64); and

expanding any telephone number contained in the text data into at least one pseudo word (phone number information "555-1212" is expanded to "call Bob at 555-1212", see step 90c).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Huang et al. and Hata et al. to search for and expand any telephone number contained in the text data into at least one pseudo word, because expanding the abbreviated text makes the output speech more natural sounding, as taught by Trader et al. (column 1, line 63 to column 2, line 4).

In regard to claim 5, Huang et al. disclose abbreviations, acronyms, character strings, and numerical strings are expanded into pseudo words (column 7, line 59 to column 8, line 12).

However, Huang et al. and Hata et al. do not specifically disclose expanding any number that includes a comma contained in the text data to at least one pseudo word.

Trader et al. disclose expanding the text data further comprises:

searching the text data for a number that includes a comma (Fig. 3c, step 126, "42,000" is located in the ad, column 5, lines 8-11); and

expanding any number that includes a comma contained in the text data into at least one pseudo word (number that includes a comma "42,000" is expanded to "42000", see step 90f).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Huang et al. and Hata et al. to search for and expand any number

that includes a comma contained in the text data into at least one pseudo word, because expanding the abbreviated text makes the output speech more natural sounding, as taught by Trader et al. (column 1, line 63 to column 2, line 4).

In regard to claim 9, Huang et al. disclose alternate speech items (phonetic units of speech) are used (column 4, lines 53-60 and column 1, lines 20-22).

However, Huang et al. and Hata et al. do not specifically disclose the alternate speech items include a plurality of words.

Trader et al. disclose the plurality of speech items includes a plurality of words, and wherein converting the sequence of text and pseudo words further comprises:

parsing the sequence of text and pseudo words to determine any words (parsing includes matching words in the ad vocabulary table, column 4, lines 10-19).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Huang et al. and Hata et al. to parse the sequence of text and pseudo words to determine any words, because using words as speech items (phonetic units) helps reduce the number of boundaries that occur and capture the coarticulatory effects over a longer unit, resulting in higher quality sounding output speech.

5. Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huang et al., in view of Hata et al., and further in view of Holm et al. (U.S. Patent 5,850,629).

In regard to claim 6, Huang et al. disclose abbreviations, acronyms, character strings, and numerical strings are expanded into pseudo words (column 7, line 59 to column 8, line 12).

However, Huang et al. and Hata et al. do not disclose searching the text for an Internet mail address and expanding any Internet mail address contained in the text data into at least one pseudo word.

Holm et al. teach expanding abbreviations and acronyms (Fig. 10) as well as ways to handle e-mail addresses (column 14, lines 15-21).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Huang et al. and Hata et al. to locate and expand email addresses (in, for example, the location of contact info step) in order to properly pronounce text containing abbreviations containing e-mail addresses and also detect sentence boundaries.

In regard to claim 7, Huang et al. disclose abbreviations, acronyms, character strings, and numerical strings are expanded into pseudo words (column 7, line 59 to column 8, line 12).

However Huang et al. and Hata et al. do not disclose searching the text data for an Internet Universal Resource Locator and expanding any Internet Universal Resource Locator in the text data into at least one pseudo word.

Holm et al. teach expanding abbreviations and acronyms (Fig. 10) as well as ways to handle e-mail addresses. Similar to e-mail, web addresses in URL format also constitute special abbreviations containing special characters, such as HTML tags.

It would have been obvious to one of ordinary skill in the art at the time of invention to modify Huang et al. and Hata et al. to locate and expand Internet Universal Resources Locators (in, for example, the location of contact info step), in order to properly pronounce text containing web addresses and other HTML related information.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian L. Albertalli whose telephone number is (571) 272-7616. The examiner can normally be reached on Mon - Fri, 8:00 AM - 5:30 PM, every second Fri off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on (571) 272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BLA 10/30/07


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